KOVTUM S. D.

USSR/Human and Animal Physiology (Normal and Pathological) T
Neuro-Muscular Physiology.

Abs Jour : Ref Zhur Biol., No 6, 1959, 26921

Author : Kovtum, S.D.

Inst : Kiew University

Title : The Lability of Nerve, Altered by Potassium Chloride and Calcium Chloride.

Orig Pub : Nauk. zap. kiewsk. un-t, 1957, 10, No 17, 113-124

Abstract : The experiments were conducted on isolated sciatic nerve of frog. The currents of action (CA) of the nerve were registered by a two-way cathode oscillograph. Local as well as total alteration of the nerve by isotonic or less concentrated solutions of KCl was accompanied by decrease of lability (L) without its preliminary increase. The decrease of L took place immediately after action of KCl

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USSR/Human and Animal Physiology (Normal and Pathological) T
Neuro-Muscular Physiology.

Abs Jour : Ref Zhur Biol., No 6, 1959, 26921

on the nerve, furthermore the duration of SA (peaks) increased and their amplitude fell steeply. The L of nerve which was totally altered by isotonic or more diluted solutions of $CaCl_2$ increased noticeably; together with this the duration of CA decreased and their amplitude increased. In experiments with low frequencies (100-200) in local as well as in total alteration of nerves with $CaCl_2$, essential changes of CA duration were not found, despite the fact that their amplitude increased in some cases by 10-30%.

Card 2/2

MORGUN, Ye.G. [Morhun, IE.H.]; KOVTUN, S.D.

At the Ninth Congress of the All-Union Society of Physiologists, Biochemists, and Pharmacologists. Fiziol.zhur. [Ukr.] 5 no.6:848-854 N-D '59. (MIRA 13:4)
(DIGESTION) (ELECTROPHYSIOLOGY)

KOVTUN, S.D.

Lability of nerves altered by barium and magnesium chlorides.
Fiziol.zhur.Ukr. 6 no.4:481-489 J1-Ag '60. (MIRA 13:7)

1. Institut fiziologii zhivotnykh Kiyevskogo gosudarstvennogo universiteta im. T.G. Shevchenko.
(BARIUM CHLORIDE--PHYSIOLOGICAL EFFECT)
(MAGNESIUM CHLORIDE--PHYSIOLOGICAL EFFECT)
(NERVES)

KOVTUN, S.D.

Lability of the monosynaptic reflex arc. Fiziol. zhur. [Ukr.] 8 no.1:62-70 Ja-F '62. (MIRA 15:2)

1. Nauchno-issledovatel'skiy institut fiziologii Kiyevskogo gosudarstvennogo universiteta im. T.G.Shevchenko.
(NERVOUS SYSTEM) (REFLEXES)

KOVTUN, S.D.; SLIVKO, E.I.

Effect of strychnine on the rhythmic activity of the bineuronal reflex arc. Fiziol. zhur. 51 no.6:681-685 Je '65. (MIRA 18:6)

1. Nauchno-issledovatel'skiy institut fiziologii pri Gosudarstvennom universitete, Kiyev.

L 28050-66

ACC NR: AP6018174 SOURCE CODE: UR/0239/65/051/006/0681/0685

AUTHOR: Kovtun, S. D.; Slivko, E. I.

ORG: Scientific Research Institute of Physiology, State University, Kiev (Nauchno-issledovatel'skiy institut fiziologii pri Gosudarstvennom universitete)

TITLE: Effect of strychnine on the rhythmic activity of a two-neuron reflex arc

SOURCE: Fiziologicheskiy zhurnal, v. 51, no. 6, 1965, 681-685

TOPIC TAGS: pharmacology, neuron, reflex activity, cat, neurophysiology

ABSTRACT: In experiments conducted on cats, rhythmic electrical irritation of the nerve of the m. quadriceps femoris was carried out after laminectomy in the lumbar region of the spinal cord and the peak potentials were recorded from the central part of the severed VIth anterior lumbar radix and the VIth posterior radix. The reactions of the two-neuron reflex arc were determined at various frequencies of irritation upon intravenous administration of strychnine in amounts of 0.09-0.12 mg/kg, i.e., in doses too low to produce convulsions. At irritation frequencies < 10 per sec strychnine did not exert any effect on the monosynaptic reflexes or reduce their intensity. At higher frequencies, particularly frequencies > 50 per sec, strychnine stimulated the monosynaptic reflexes. The effect observed can be explained by removal under the action of stryohnine of the inhibition that arises in motor neurons upon irritation of afferent nerve fibers of the Ist group. Orig. art. has 2 figures. [JPRS]

SUB CODE: 06/ SUBM DATE: 21Apr64/ ORIG REF: 002/ OTH REF: 012

Card 1/1 UDC: 612.832

18.7100

67676
SOV/126-8-6-24/24

AUTHOR: Kovtun, S.F.

TITLE: Influence of Rate of Heating and Cooling on Irreversible Deformation of Iron

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 8, Nr 6, pp 939-945 (USSR)

ABSTRACT: It is now established (Ref 1 to 6) that metals with pronounced anisotropy of physical properties change their dimensions on repeated heating and cooling, the residual deformation depending on the number of temperature cycles. It is also likely that the deformation will be particularly marked if the cycles include the polymorphic transformation temperature and will depend on the rate of movement of the inter-phase boundary. Preliminary experiments showed the author that scaling distorts test results and in this work a special vacuum installation (Fig 1) was used. An airlock enabled specimens to be passed without breaking the vacuum; the heating element was a 35 mm diameter, 500 mm long molybdenum-wire wound tube. A series of radiation shields is provided. Cylindrical specimens of iron and carbon steels were tested, the tubes being Armco, St 3, St 40, U8A steel and

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Influence of Rate of Heating and Cooling on Irreversible Deformation of Iron

U 12 A with the respective compositions: 0.04, 0.15, 0.40, 0.80, 1.20% C; 0.14, 0.45, 0.55, 0.30, 0.20% Mn; 0.20, 0, 0.25, 0.30, 0.30% Si; 0, 0, 0.1, 0.2, 0.2% Cr; 0.02, 0.40, 0.20, 0.20, 0.20% S (Translator's note: these last 4 figures are probably ten times too high.); 0.010, 0.015, 0.020, 0.030, 0.080% P; 0.026, 0, 0.030, 0, 0% N. The specimens were heated to 1000 ± 20°C, held for 30 minutes, cooled to 300°C in 20 minutes, all these operations being effected in vacuum (5×10^{-5} - 3×10^{-7} mm Hg) with special precautions to avoid surface oxidation. After each 10 to 20 temperature cycles the specimens were cooled to room temperature and removed from the evacuated system for measurement and surface examination. Heating and cooling rates in the alpha-gamma transition range were 18 and 45°C/minute. Fig 2 shows the appearance of surfaces before and after 300 cycles. Some of the tests were carried out with the same specimen under different conditions: in one set heating was rapid and cooling slow and vice versa in the other. The results are shown by

Influence of Rate of Heating and Cooling on Irreversible Deformation of Iron

curves 1 and 2, respectively, in Fig 3 (which shows percentage length - change of the specimen as a function of number of cycles). Similar plots are shown for the steel specimens. The results show that large permanent length changes are produced by repetitive temperature cycles covering the alpha-gamma transition range. The permanent change can be reduced by suitable choice of "Impurity" (particularly carbon) content; the main controlling factors, however, are the rates of heating and cooling. The author explains the observed effects in terms mainly of phase boundary conditions. There are 5 figures, 1 table and 8 references, 5 of which are Soviet, 2 English and 1 German.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR
(Physico-Technical Institute, AS UkrSSR)

SUBMITTED: December 25, 1958

S/126/60/010/006/009/022
E193/E483

26.2240 abs 2308

AUTHORS: Popov, B.Ye., Kovtun, S.F. and Amonenko, V.M.

TITLE: Refining the Structure of Beryllium and Chromium by the Application of Ultrasonics During Arc-Melting

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol.10, No.6, pp.853-856

TEXT: Owing to its coarsely-crystalline, dendritic structure, cast beryllium has low mechanical properties and it is for this reason that beryllium components are usually made by the powder metallurgy techniques. The disadvantage of this method consists in increased risk of contamination with beryllium oxides and other impurities which may considerably reduce the ductility of the metal. The object of the present investigation was to explore the possibility of producing pure (i.e. made by fusion) beryllium and chromium with a structure consisting of small, equiaxial grains. The experiments were carried out in an argon-arc furnace, the refining of the structure being obtained by subjecting the molten metal to ultrasonic vibration. A magnetostrictive converter, fed by a high-frequency generator operating in the 10 to 30 kilocycle

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S/126/60/010/006/009/022
E193/E483

Refining the Structure of Beryllium and Chromium by the Application of Ultrasonics During Arc-Melting

range, served as the source of ultrasonic waves. The sound energy was transmitted to the metal by means of a half-wave exponential concentrator and a water-cooled copper sound-conductor, led into the furnace through its bottom flange and attached to the crucible. The metal was subjected to the ultrasonic vibration for about 1 to 2 min, while still molten, and throughout the solidification stage. The degree of grain-refining achieved by these means was such that, in the case of beryllium, grain-size comparable to that in sintered specimens was obtained. The effect of the ultrasonic treatment was most pronounced in the central region of the ingot, the grains near its surface being somewhat larger and reaching the average size of 100 to 120 microns. This variation of the grain-size was attributed to non-uniformity of the acoustic field in the crucible of semi-spherical shape and to the variation in the rate of heat transferred from the crucible walls, the grain-size being smallest in the regions corresponding to the maximum cooling rate. The structure of chromium subjected

S/126/60/010/006/009/022
E193/E483

Refining the Structure of Beryllium and Chromium by the Application of Ultrasonics During Arc-Melting

to the same treatment was more uniform, the difference between the largest and smallest grains not exceeding 100%. The grains in ultrasonically treated chromium were 40 to 50 times smaller than those in argon-arc melted specimens not subjected to the ultrasonic vibration and comparable in size to grains found in metal molten by conventional methods and allowed to solidify in the crucible. The density of the argon-arc melted beryllium and chromium specimens could be increased by increasing the duration of the ultrasonic treatment while the metal was still molten; when the duration of the ultrasonic treatment prior to solidification was not sufficiently long, pores, visible under microscope, were formed in the metal. There are 4 figures and 9 references: 5 Soviet and 4 non-Soviet (1 of which is translated into Russian).

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR
Physicotechnical Institute AS UkrSSR)

SUBMITTED: June 6, 1960

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21.2100

S/126/62/013/002/018/019
E039/E135

AUTHORS: Kovtun, S.F., and Kogan, V.S.

TITLE: Texture and its connection with the change in dimensions of uranium samples with cyclic heat treatment

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.2, 1962, 316-317

TEXT: The change in dimensions after heat cycling in uranium is caused either by a phase transformation or by its anisotropic coefficient of thermal expansion which results in an irreversible change of dimensions. It has been shown that this occurs only if the metal has a marked texture and that if a sample is raised to a temperature in the β phase range and then chilled to room temperature the texture is almost completely destroyed, and the coefficient of growth on heat cycling is greatly reduced. However, it has been subsequently shown that uranium can maintain a marked texture after heat cycling and that the value and even the sign of the change in dimensions of a sample depends on the condition of the metal.

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Texture and its connection with ... S/126/62/013/002/018/019
E039/E135

The dependence of the relative change in length of three types of uranium (extruded, rolled and cast) on the number of cycles is illustrated graphically. The samples were heated up to 950 °C, soaked at this temperature for 15 minutes and then chilled to room temperature. The heat treatment was carried out in a vacuum of $4 - 6 \times 10^{-4}$ mm Hg on rods 3.75 mm in diameter and 60 mm long. The rate of change of temperature was 40 °C/min. It was confirmed by means of X-ray diffraction measurements that the uranium structure was not destroyed by heat cycling through the $\alpha - \beta$ transition. The extruded sample showed an increase in relative length of approximately 10% after about 100 cycles and then changed very little up to the maximum number recorded (300). The relative increase in length of the rolled sample passed through a maximum of ~3% at about 80 cycles, reversed sign at 150 cycles, shrinking by about 10% after 300 cycles. In the case of cast uranium the relative increase in length rose steadily up to ~40% after 300 cycles. There is 1 figure.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR
(Physicotechnical Institute AS UkrSSR)

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SUBMITTED: June 5, 1961

IVANOV, V.Ye.; KOVTUN, S.F.; TARASOV, N.D.; UL'YANOV, R.A.

Vacuum rolling of chemically active metals. TSvet. met. 35 no.11:85-88 N '62. (MIRA 15:11)
(Vacuum metallurgy) (Rolling (Metalwork))

UL'YANOV, R.A.; TARASOV, N.D.; KOVTUN, S.F.

Vacuum cladding of high-melting metals. TSvet. met. 36 no.3: 74-76 Mr 63. (MIRA 16:5)

(Metal cladding)

ACCESSION NR: AP4017360 S/0126/64/017/002/0263/0268

AUTHORS: Kovtun, S. F.; Ul'yanov, R. A.

TITLE: The effect of alloying on thermal expansion of titanium

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 2, 1964, 263-268

TOPIC TAGS: titanium, titanium thermal expansion, titanium alloy, aluminum, molybdenum, chromium, rhenium, tantalum, lantharum, selenium, indium, bismuth, tellurium, palladium, phase transformation, reversible transformation, TGO titanium, vacuum dilatometer

ABSTRACT: Thermal expansion of Ti and its alloys was studied in order to find the materials that could be used as corrosion-preventing. on these metals at various temperatures. The studies were conducted in a vacuum dilatometer (1×10^{-5} mm Hg) with a measuring accuracy to 0.002 mm. The TGO titanium samples were melted in an arc furnace under argon and then remelted at least 5 times in order to obtain a more regular distribution of the alloying elements. To prevent the evaporation of the volatile components (Se, In, Bi, Te, La), the pressure in the furnace was increased. The ingots were rolled into rods 10 mm in diameter, and

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ACCESSION NR: AP4017360

the variation of the thermal expansion was measured in the temperature range between -196C (liquid nitrogen) and 1000C. It was established that the variation in the sample length can be expressed by the parabolic formula

$$l_t = l_0(1 + at + bt^2),$$

where: $a = 8.0 \times 10^{-6}$; $b = 2.7 \times 10^{-9}$. Alloying of Ti with Ta, Pd, and La produced insignificant changes in the mean coefficient of thermal expansion at 0-400C, alloying with Al and Cr caused it to increase, and alloying with Re lowered it substantially. The influence of the alloying elements on steel expansion was found to depend on the phase in which these elements occurred. The expansion of Ti was determined by the phase composition of the alloy. Some variations in the residual lengths of samples were observed after their cyclic heating and cooling. These variations were most pronounced in Ti and in Ti-Mo alloys. They may be explained by the gradual decomposition of the metastable β-phase in the cooling process and by the formation of the ω-phase. It was determined that the alloying elements (soluble in the α-phase) with thermal expansion coefficients smaller than that of Ti lowered the alloy coefficient of expansion, while those with higher coefficients increased the coefficient of expansion of the alloy.

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ACCESSION NR: AP4017360

Samples of Ti, Zn, and their alloys changed shape at temperatures above those of phase alteration. This is caused by the relaxation of stresses induced in the course of phase alteration. Orig. art. has: 5 graphs.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physicotechnical Institute AN UkrSSR)

SUBMITTED: 03Mar63 DATE ACQ: 18Mar64 ENCL: 00

SUB CODE: MM NO REF SOV: 008 OTHER: 004

Card 3/3

BR

ACCESSION NR: AP4037069 S/0129/64/000/005/0055/0056

AUTHOR: Koytun, S. F.; Ul'yanov, R. A.; Tarasov, N. D.

TITLE: Metal cladding under vacuum

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 5, 1964, 55-56

TOPIC TAGS: vacuum cladding, chemically active metal, iron clad steel, copper brass, pure iron, electrolytic Ni, brass, cohesion strength, shear test, diffusion welding, intermetallic layer, interdiffusion

ABSTRACT: The vacuum cladding of chemically active metals is highly promising and was developed by the authors. Iron-clad "Kh18N9T" steel, copper-brass, commercially pure iron, "M1" copper, "VT1"-Ti, electrolytic Ni and brass were investigated. During heating and rolling pressure in the vacuum did not go beyond 4×10^{-5} mm Hg. Rolling temperatures and reduction were adjusted to the properties of the metals and their interaction at elevated temperatures. Cohesion was determined by shear tests. In metals with a similar as well as dissimilar base but indefinitely soluble in the solid state, diffusion welding takes place providing a strong cohesion after a 15% reduction. Further deformation and higher

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ACCESSION NR: AP4037069

temperatures enhance cohesion strength. The maximum strength is determined by the structure of the intermediate layers that contain intermetallic phases ($TiCu_3$, Fe_2Ti, Zr_2Ni, etc.) and form directly adjacent to the contact surface as a result of interdiffusion. Orig. art. has: 3 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR(Physico-Technical Institute, AN SSSR)

SUBMITTED: 00 DATE ACQ: 05Jun64 ENCL: 00

SUB CODE: MM NO REF SOV: 001 OTHER: 001

Card 2/2

L 14317-65 EWT(m)/EWP(b) ASD(m)-3 JD/JG/MLK
ACCESSION NR: AT4049057 S/0000/64/000/000/0095/0103

AUTHOR: Kovtun, S.F.; Ulyanov, R.S.

TITLE: The influence of alloying on the physicochemical properties of titanium

SOURCE: Soveshchaniyo po metallurgii, metallovedeniyu i primeneniyu titana i yego

trudy" soveshchaniya. Moscow, ...

TOPIC TAGS: titanium chemical property, titanium mechanical property, alloying element, titanium alloy, electrical resistivity, titanium alloy oxidizability

ABSTRACT: The influence of the usual additions (Al, Cr, Mo) on electrical resistivity, linear expansion and oxidizability, as well as that of other elements (Re, Ta, Ir, Pd, Ba, La) that could improve the physicochemical properties were studied in experimental alloy specimens (preparation described) at temperatures from -195 to 1250C; various percentages of the additives were tested by compensation and dilatometry. It was found that changes in hardness and resistivity of titanium alloys in the range of solid solutions from -196C to phase transformation temperatures are determined by the ratio of the atomic diameters and the chemical nature of the additives. At certain concentrations, the

L 14317-65
ACCESSION NR: AT4048067

addition of elements with greatly differing atomic diameter and chemical properties will result in greater hardness and resistivity of the alloy, particularly with Al, Re,

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L 14317-65
ACCESSION NR: AT4048057

structure of the intermediate layer; this was sufficiently strong, particularly in the Cu-Ti system. Orig. art. has: 14 figures.

ASSOCIATION: none

SUBMITTED: 15Jul64 ENCL: 00 SUB CODE: MM

NO REF SOV: 017 OTHER: 005

Card 3/3

KOVTUN, S.F.; UL'YANOV, R.A.; TARASOV, N.D.

Metal cladding in vacuum. Metalloved. i term. obr. met. no. 5:55-56 My '64. (MIRA 17:6)

1. Fiziko-tekhnicheskiy institut AN UkrSSR.

ACCESSION NR: AP4034048 S/0126/64/017/004/0505/0511

AUTHORS: Ul'yanov, R. A.; Kovtun, S. F.

TITLE: Effect of alloying on electrical resistivity of titanium

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 4, 1964, 505-511

TOPIC TAGS: electric resistivity, titanium, aluminum, molybdenum, chromium, rhenium, palladium, tantalum, lanthanum, titanium iodide, commercial titanium

ABSTRACT: The results of an experimental study on the electrical resistivity changes arising from alloying titanium with aluminum, molybdenum, chromium, rhenium, palladium, tantalum, and lanthanum at temperatures from -196 to 1250C have been reported. Measurements at high temperatures were performed using a compensation method in vacuum with residual pressures not exceeding 10-5 mm Hg. Both 99.9% iodide titanium and commercial titanium were used. The resistivity ρ in both specimens indicates a polymorphic transformation at 882C. The values of ρ for the two titanium specimens do not differ more than 5% over the temperature range investigated. The microstructures of the various titanium-base alloys are given. A plot of alloy hardness and resistivity at 20C versus composition

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ACCESSION NR: AP4034048

indicates that both values increase with alloying and that the increase is directly proportional to the difference in atomic diameters of the alloying element and titanium. The temperature dependence of the electrical resistivity in the binary alloys titanium-aluminum, molybdenum, chromium, and more complex Ti-Al-Cr-Mo alloys is presented graphically. The aluminum and molybdenum alloys raise the value of ρ in proportion to the alloy content throughout the measured temperature range. The 3% rhenium alloy shows a lower increase in ρ than the 1%-concentration specimen. Rhenium, as well as tantalum and palladium alloys of titanium, shows a decrease in the $\alpha \rightarrow \beta$ transformation temperature. Orig. art. has: 5 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR(Physicotechnical Institute AN UkrSSR)

SUBMITTED: 02Apr63 ATD PRESS: 3077 ENCL: 00

SUB CODE: MM, EM NO REF SOV: 010 OTHER: 006

Card 2/2

KOVTUN, S.F.; UL'YANOV, R.A.

Device for measuring Young's modulus at low temperatures. Zav. lab. 30 no.11:1414 '64 (MIRA 18:1)

(N) L 11105-66 EWT(m)/EPF(n)-2/EWP(t)/EWP(b) IJP(c) JD/JG

ACC NR: AP6001107 SOURCE CODE: UR/0136/65/000/012/0079/0082

AUTHOR: Ul'yanov, R. A.; Kovtun, S. F.

ORG: none

TITLE: Vacuum cladding of titanium

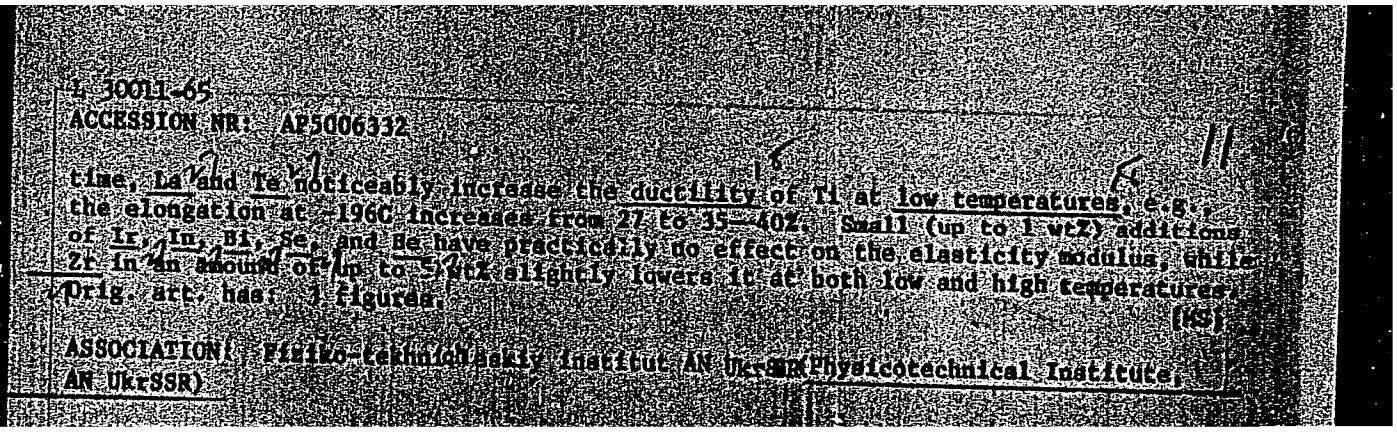
SOURCE: Tsvetnyye metally, no. 12, 1965, 79-82

TOPIC TAGS: vacuum cladding, niobium, titanium, molybdenum, tantalum, tungsten

ABSTRACT: The feasibiltiy of cladding titanium with refractory metals such as Nb, Mo, Ta, and W has been investigated. Cladding was performed by pack rolling in a 10^{-5} mm Hg vacuum at 1100—1200C with reductions (in titanium) up to 60%. It was found that rolling alone produces no significant diffusion between titanium and niobium, molybdenum, or tantalum. A boundary between the cladding and titanium can be easily observed. Subsequent annealing, however, causes diffusion and increases the bond strength. With a reduction of 50%, the highest bond strength, 35 kg/mm^2, between titanium and tantalum was obtained. The bond strength between titanium and molybdenum or niobium was 25 kg/mm^2. No satisfactory bond was obtained between titanium and tungsten owing apparently to the insufficient ductility of tungsten at 1200C and the insufficient mutual solubility of these metals. Orig. art. has: 4 figures.

SUB CODE: 11 / SUBM DATE: none/ ORIG REF: 005/ ATD PRESS: 4176 [ND]

Card 1/1 HW UDC: 669.295:621.771.8

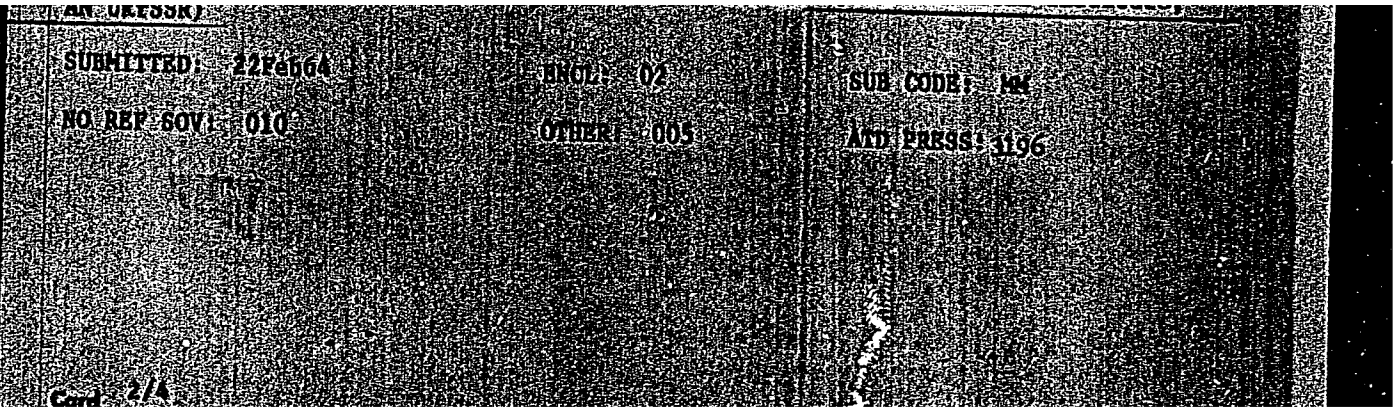


L 30011-65
ACCESSION NR: AP5006332

time, La and Te noticeably increase the ductility of Ti at low temperatures, e.g., the elongation at -196C increases from 27 to 35—40%. Small (up to 1 wt%) additions of Ir, In, Bi, Se, and Be have practically no effect on the elasticity modulus, while Zr in an amount of up to 5.2wt% slightly lowers it at both low and high temperatures. Orig. art. has: 1 figure.

(NS)

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physicotechnical Institute, AN UkrSSR)



IL'YASHOV, V.A.; KOVTUN, S.F.

Titanium cladding by vacuum. Svar. proiz. no. 12:29-32 D '65
(MIRA 19:1)

L 36525-66 EWT(d)/EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) EM/JD/GD

ACC NR: AT6012388 SOURCE CODE: UR/0000/65/000/000/0173/0179

AUTHORS: Ul'yanov, R. A.; Kovtun, S. F.

ORG: none

TITLE: The modulus of the elasticity of metals and titanium alloys

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 173-179

TOPIC TAGS: elasticity modulus, ~~metallurgy~~, titanium alloy, Young modulus, heat of fusion, thermal expansion, metallurgic research, crystal structure

ABSTRACT: Discussions on the role of the modulus of elasticity in metals and titanium alloys are developed. The relationship between the modulus of elasticity of a metal and the microstructure of the metal is reviewed: one definition of E is related to the electron structure of the metal; a second definition is E = W/V, where W is the work required to double the inter-atom distance and V is volume. Data for several metals are compiled for the purpose of indicating the variation of the temperature of fusion, the modulus of elasticity, the coefficient of thermal expansion, and the bonding energy in the crystal lattice of the metal. The physical occurrences within the crystal structure under heating are reviewed. Unit bonding energies of

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several metals are compared with respect to their effect on the coefficient of thermal expansion (see Fig. 1). The reasons for elements with a small atomic diameter having a larger modulus of elasticity than that of elements with larger atomic diameter are reviewed. The atomic diameter is also discussed in regard to its joint effect with temperature on the modulus of elasticity. The combination of elements in alloys can have varying effects on the modulus of elasticity, depending upon the hardness of the alloy, concentrations of elements, etc. The authors thank V. K. Grigorovich for his valued comments.

L 36525-66

ACC NR: AT6012388

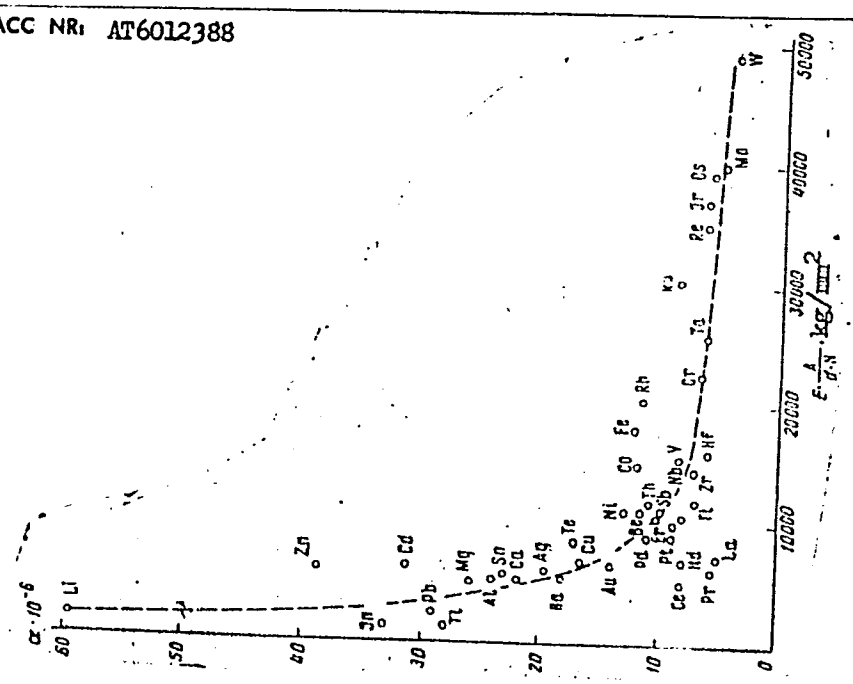

Fig. 1. Variation of the coefficient of thermal expansion of elements with the unit bonding energy in the crystal lattice.

Orig. art. has: 4 figures.

SUB CODE: 11/ SUBM DATE: 02Dec65/ ORIG REF: 015/ OTH REF: 005

Card 3/3

L 36526-66 EWT(d)/EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD/EM/JG/GD

ACC NR: AT6012389 SOURCE CODE: UR/0000/65/000/000/0180/0188

AUTHORS: Kovtun, S. F.; Ul'yanov, R. A.

ORG: none

TITLE: The effect of alloying on the modulus of elasticity, strength, and plasticity of titanium in the temperature interval from -196 to 800°

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 180-188

TOPIC TAGS: ~~elasticity~~, plasticity, titanium, titanium alloy, metal strength, elasticity modulus, molybdenum, aluminum, rhenium, chromium, palladium, lanthanum high strength alloy

ABSTRACT: The effect of alloying on the modulus of elasticity, the strength, and the plasticity of titanium in the temperature interval -196 to 800C is discussed. A description is given of the experimental apparatus used in testing. In this temperature range the alloying of titanium with aluminum, molybdenum, chromium, rhenium, and palladium causes a raising of the modulus of elasticity within the solubility limits of α-titanium. For concentrations of chromium, rhenium, molybdenum, and palladium exceeding the solubility in α-titanium, the modulus of elasticity of alloys at low temperatures is less than that for pure titanium, but with increasing temperatures the lowering of the modulus of elasticity is less pronounced. In particular it was

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L 36526-66

ACC NR: AT6012389

noted that the intensity of reduction of the modulus of elasticity with temperature is less in alloys which are simultaneously made up of aluminum, chromium, and molybdenum. Rhenium in concentrations up to 3% by weight increases the strength of alloys at room temperature and especially at high temperatures; however, under these conditions there is a sharp drop in plasticity. Palladium and tantalum in the concentrations investigated had an insignificant effect upon the strength and plasticity of titanium alloys. Alloying of lanthanum within the solubility limits of α-titanium has little effect on the elasticity and strength of the alloys, but increases their plasticity at low temperatures. The application of vacuum technology for inhibiting the contamination of metals by impurities makes possible high plasticity of titanium at low temperature. Orig. art. has: 5 figures.

SUB CODE: 11/ SUBM DATE: 02Dec65/ ORIG REF: 015/ OTH REF: 005

Card 2/2

KASHERININOV, G.O.; LEVINSKIY, M.I.; STANKEVICH, V.A.; KOVTUN, T.D.; BELYAYEVA, I.I.; POPOV, Ye.I.; SMIRNOV, N.S.; SHAKHTAKHTINSKIY, M.G.; KULIYEV, A.A.

Brief reports. Zav.lab. no.11:1403-1404 '59. (MIRA 13:4)

1. Institut Gipronikel' (for Kasherininov). 2. Institut goryuchikh iskopayemykh (for Belyayeva, Popov Smirnov). 3. Institut fiziki i matematiki Akademii nauk Azerbaydzhanskoy SSR (for Shakhtakhtinskiy, Kuliyev).
(Chemical apparatus)

YEREMINA, Z.I.; KOVTUN, T.P.

Vanadatometric determination of sodium citrate. Apt.delo 14 no.2:72-73 Mr-Ap '65.

(MIRA 19:1)

1. Khar'kovskiy farmatsevticheskiy institut.

KOVTUN, V., Geroy Sovetskogo Soyuza; FAN'YAN, D.

The restorers. Voen. znan. 41 no.2:10-11 F '65.
(MIRA 18:3)

KOVTUN, V. A., PASICHNIK, M. V. and PUCHEROV, N. N.

"Elastic Scattering of Protons by Al^{27}, Cu, Bi^{209} Nuclei,"

Inst. for Physics, Ukr Acad. Sci.

paper submitted at the A-U Conf. on Nuclear Reactions in Medium and Low Energy Physics, Moscow, 19-27 Nov 57.

Kovtun, V.A.

21 (7), 21 (8)

AUTHOR: Rudakov, V. P. SOV/89-7-1-18/26

TITLE: IX All-Union Conference on Nuclear Spectroscopy (IX Vsesoyuznoye soveshchaniye po yadernoy spektroskopii)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 1, pp 76-78 (USSR)

ABSTRACT: The IX All-Union Conference was held from January 26 to February 2, 1959 at Khar'kov. More than 300 participants heard 100 lectures, the most important of which dealt with the following fields. Nuclear Theory General problems of β-decay. A. S. Davydov (MGU): Theoretical classification of low-energy excited nuclear states. L. K. Peker: Deformed nuclei. B. L. Birbrair, L. K. Peker, L. A. Sliv (LFTI): Quadrupole oscillations of deformed nuclei. Ye. V. Inopin, V. Yu. Gonchar, S. P. Tsytko (KhFTI): Calculation of the ft-values with matrix elements for β-transitions by means of the generalized nuclear model. S. T. Belyayev (IAE): Consideration of pair-correlation in nuclei. A. B. Migdal (IAE): The application of the superconductivity model to nuclei for the purpose of calculating their moments of inertia. P. E. Nemirovskiy (IAE): Problems of the neutron stability of nuclei. I. A. Chereshnskiy (IAE): The present stage in the theory of β-decay. V. V. Vladimirskiy,

Card 1/3

V. K. Grigor'yev, V. A. Yergakov, Yu. V. Trebukhovskiy (ITEF): Measurement of the angular correlation between electron and neutrino in the decay of the neutron. V. M. Lobashov, V. A. Nazarenko, L. I. Rusinov (LFTI): Measurement of the correlation between the transversal electron polarization and circular polarization of γ-quanta occurring in the decay of Sc^{46} and Co^{60}. Decay Schemes. γ-radiation of Nuclei. Yu. V. Amfiriyev, A. K. Val'ter, Yu. V. Gonchar, Ye. G. Kopanets, A. N. L'vov, P. M. Tutakin, S. P. Tsytko, D. V. Sorokin, A. S. Deyneko, I. Ya. Malakhov, A. Ya. Taranov (Fiziko-tekhnicheskiy Khar'kovskiy institut (Physico-technical Institute, Khar'kov)): The $Si^{28,29,30}(p,\gamma)$, $Ne^{20}(p,\gamma)$, $S^{32,34}(p,\gamma)$, $Ar^{40}(p,\gamma)$ and $N^{14}(p,\gamma)$ reactions. D. G. Alkhazov, A. P. Grinberg, G. M. Gusinskiy, M. Kh. Lemberg, V. V. Rozhdestvenskiy, K. I. Yerokhina of the Leningradskiy fiziko-tekhnicheskiy institut (Leningrad Physico-technical Institute): Investigation of the Coulomb excitation of the lower levels of some nuclei during their bombardment by multiply charged ions (C, N, O, and Ne). A. Ye. Kalyamin, A. N. Murin, B. K. Pokrovskiy, V. A. Yakovlev (RIAN): New isotopes Tu^{161}, Ho^{153}, Ho^{155} and Ho^{157}. B. S. Dzhelepov, V. A. Sergiyenko (LGU): Decay schemes of some neutron-deficient isotopes, set up on the basis of measurements of the coincidence of the internal conversion electrons. Spectroscopy Engineering. B. S. Dzhelepov, N. P. Ivanov, V. A. Moskvasov, V. G. Chumin (RIAN): α-spectrometer with double focusing. S. A. Baranov, V. V. Yamchenko, A. G. Zelenkov, A. P. Malov, G. Ya. Shchepkin (IAE): Improved α-spectrometer. L. F. Barchuk, G. V. Belykh, V. I. Golyshkin, V. A. Kovtun (IFAN UkrSSR): Magnetic spectrograph for heavy charged particles. The representatives of the Ministerstvo radiotekhnicheskoy promyshlennosti (Ministry of the Radio-engineering Industry) gave a report about new multipliers. The Conference was closed by B. S. Dzhelepov, who stressed the fact that nuclear tables and reference works ought to be published much more quickly in order to be of real use to the experimenter.

Card 3/3

51

KONETSKIY, N.V.; KOVTUN, V.A.; KARAS', G.Ye.; BERNSHTEYN, P.B.

Hydraulic press equalizing 1500 tons. Ogneupory 26 no. 2:62-69 '61. (MIRA 14:2)

1. Semilukskiy ogneupornyy zavod (for Konetskiy, Kovtun, Karas').
2. Vsesoyuznyy institut ogneuporov (for Bernshteyn).
(Hydraulic presses)

KOVTUN, V.F., kand. tekhn. nauk; ZABOLOTSKAYA, N.P.

Arsenic removal and reduction of Kerch peninsula ores with methane. Met. i gornorud. prom. no.4:68-70 Jl-Ag '64.
(MIRA 18:7)

KOVTUN, V. F. Cand Chem Sci O- (diss) "Physicochemical study of ferric hydroxides." Kiev, 1958. 15 pp with graphs (Acad Sci UkSSR. Inst of General and Inorganic Chemistry), 150 copies (KL, 52-59, 117)

KOVTUN, V.K.

Automatic shifting of the flame in a furnace operating on natural gas. Stek. i ker. 18 no.7:37-39 Jl '61. (MIRA 14:7)
(Glass furnaces)

ACC NR: AR6036129 (N) SOURCE CODE: UR/0398/66/000/010/A007/A008

AUTHOR: Kovtun, V. N.

TITLE: Use of topological transformations in the design of a ship's hull form

SOURCE: Ref. zh. Vodnyy transport, Abs. 10A50

REF SOURCE: Sudostr. i morsk. sooruzh. Resp. mezhved. nauchno-tekhn. sb., vyp. 1, 1965, 51-57

TOPIC TAGS: mathematic transformation, marine engineering, shipbuilding engineering

TOPOLOGY

ABSTRACT: By means of the topological transformation method used in descriptive geometry it is possible to obtain from one initial geometric form numbers of derivatives of geometric forms which correspond to some given requirements. As for ships, this will be a particular volume confined by given shapes of frames and waterlines. A 180° peripheral arc has been taken as the initial curve and a nomogram plotted which characterizes the relationship between the coordinates of the design center and the shape and coefficient of fineness of the obtainable frame. An example demonstrates the designing of a ship's hull form in correspondence to given requirements. With described method it is possible to determine analytically the coordinates of any point of a ship's hull form.

SUB CODE: 13/ SUBM DATE: none

Card 1/1 UDC: 629.12.001.2

ACC NR: AR6036129 (N) SOURCE CODE: UR/0398/66/000/010/A007/A008

AUTHOR: Kovtun, V. N.

TITLE: Use of topological transformations in the design of a ship's hull form

SOURCE: Ref. zh. Vodnyy transport, Abs. 10A50

REF SOURCE: Sudostr. i morsk. sooruzh. Resp. mezhved. nauchno-tekhn. sb., vyp. 1, 1965, 51-57

TOPIC TAGS: mathematic transformation, marine engineering, shipbuilding engineering, TOPOLOGY

ABSTRACT: By means of the topological transformation method used in descriptive geometry it is possible to obtain from one initial geometric form numbers of derivatives of geometric forms which correspond to some given requirements. As for ships, this will be a particular volume confined by given shapes of frames and waterlines. A 180° peripheral arc has been taken as the initial curve and a nomogram plotted which characterizes the relationship between the coordinates of the design center and the shape and coefficient of fineness of the obtainable frame. An example demonstrates the designing of a ship's hull form in correspondence to given requirements. With described method it is possible to determine analytically the coordinates of any point of a ship's hull form.

SUB CODE: 13/ SUBM DATE: none

Card 1/1 UDC: 629.12.001.2

GALUSHKO, V.P.; KOVTUN, V.N.; KRICHMAR, S.I.

Study of the anolyte layer by microscopy. Ukr. khim. zhur. 29 no.7:764-770 '63. (MIRA 16:8)

1. Dnepropetrovskiy gosudarstvennyy universitet.
(Electroplating) (Electrodes) (Microscopy)

L 34424-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB
(N)

ACC NR: AP6003319 SOURCE CODE: UR/0365/66/002/001/0038/0040

AUTHOR: Brynza, A. P.; Fedash, V. P.; Kovtun, V. N.

ORG: Dnepropetrovsk State University (Dnepropetrovskiy gosudarstvennyy universitet)

TITLE: Determination of impedance of titanium electrodes during anode polarization in sulfuric acid

SOURCE: Zashcita metallov, v. 2, no. 1, 1966, 38-40

TOPIC TAGS: electrode, titanium, electric impedance, polarization, electric potential

ABSTRACT: The resonance method described by V. N. Kovtun and V. P. Galushko (Zh. fiz. khimii, 1965, 39, 1028) was used for measuring the impedance components (polarization capacitance C_s and active component of resistance R_s) as a function of frequency of a Ti electrode, made of titanium grade BT-1 (electrode surface 0.25 cm^2), in 5N H_2SO_4. The maximum C_s and the minimum R_s were observed during anode polarization in 5N H_2SO_4 solution within the potential range from stationary to complete passivation (-0.07 v). These extreme points corresponded to the potential of the beginning of passivation (-0.2 v). During displacement of the potential

Card 1/2 UDC: 541.138.2

L 34424-66

ACC NR: AP6003319

to the side of positive values, the increase in C_s and decrease in R_s were observed in the active state region. The transition of Ti from the active to the passive state was accompanied by a decrease in C_s and an increase in R_s which were followed by gradual changes in the values of the impedance of the electrode. This was contrary to the behavior of metals passivated with the formation of a dense oxide film. In addition, a large dependence of C_s on the frequency of the a.c. was observed in the same region of potentials (from -0.2 to ~0.7 v). All these facts indicated the absorption mechanism of passivation (adsorption of oxygen). The C_s changed little and practically did not depend on the frequency in the region of potentials from +0.2 to +0.75 v. But R_s, at the same potentials, increased sharply. This type of change is usually related to the formation of a stable oxide film on the surface of the electrode. Therefore, the passivating layer on the Ti electrode had a different nature in different regions of potentials: the adsorption of oxygen within a potential range from ~0.2 to ~0.7 v and the presence of a stable oxide film at more positive values of potential (from +0.2 to +0.75 v). Orig. art. has: 4 fig.

SUB CODE: 09/ SUBM DATE: 27Jul65/ ORIG REF: 009/ OTH REF: 003

Card 2/2 BKG

KOVTUN, V.N., aspirant

A method for the transformation of a circumference arc in problems on the design of the surfaces of casings. Izv. vys. ucheb. zav.; mashinostr. no.9:5-10 '65. (MIRA 18:11)

KOVTUN, V.N.; GALUSHKO, V.P.

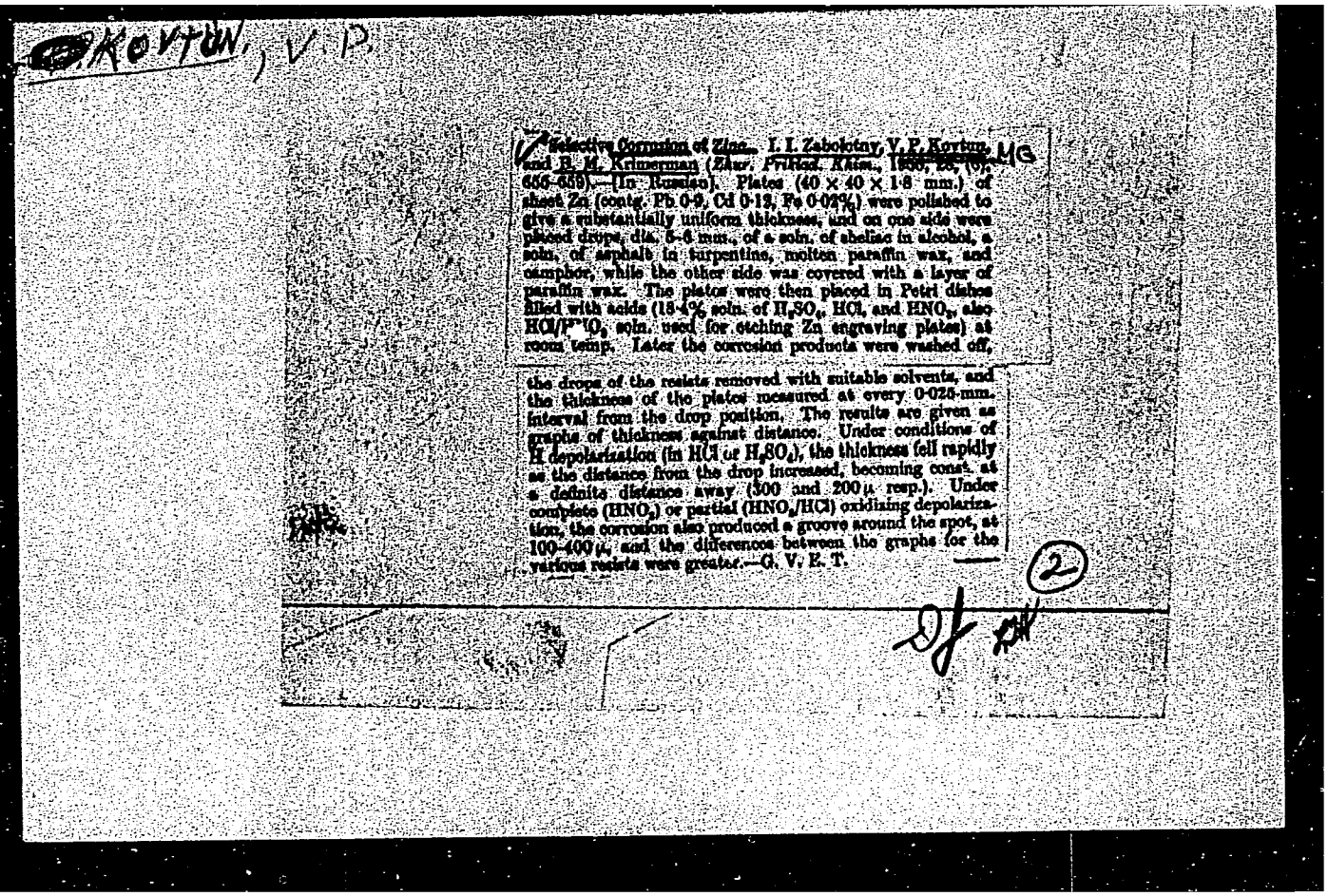
Measurement of main components of the complex resistance of an electrode. Zhur. fiz. khim. 39 no.4:1028-1030 Ap '65. (MIRA 19:1)

1. Dnepropetrovskiy gosudarstvennyy universitet. Submitted Dec. 26, 1963.

BRYNZA, A.P.; FEDASH, V.P.; KOVTUN, V.N.

Determining the impedance of a titanium electrode during anodic polarization in sulfuric acid. Zashch. met. 2 no.1: 38-40 Ja-F '66. (MIRA 19:1)

1. Dnepropetrovskiy gosudarstvennyy universitet. Submitted July 27, 1965.



KOVTUN, V. P.

Selective Corrosion of Zinc. I. I. Zabolotny, V. P. Kovtun, and B. M. Krimerman (*Zhur. Prikład. Khim.*, 1950, 23, (6), 656–659).—[In Russian]. Plates (40 × 40 × 1·6 mm.) of sheet Zn (contg. Pb 0·9, Cd 0·12, Fe 0·02%) were polished to give a substantially uniform thickness, and on one side were placed drops, dia. 5–6 mm., of a soln. of shellac in alcohol, a soln. of asphalt in turpentine, molten paraffin wax, and camphor, while the other side was covered with a layer of paraffin wax. The plates were then placed in Petri dishes filled with acids (18·4% soln. of H_2SO_4, HCl, and HNO_3, also HCl/$FeCl_3$ soln. used for etching Zn engraving plates) at room temp. Later the corrosion products were washed off, the drops of the resists removed with suitable solvents, and the thickness of the plates measured at every 0·025-mm. interval from the drop position. The results are given as graphs of thickness against distance. Under conditions of H depolarization (in HCl or H_2SO_4), the thickness fell rapidly as the distance from the drop increased, becoming const. at a definite distance away (300 and 200 μ resp.). Under complete (HNO_3) or partial (HNO_3/HCl) oxidizing depolarization, the corrosion also produced a groove around the spot, at 100–400 μ, and the differences between the graphs for the various resists were greater.—G. V. E. T.

(2)

KOVTUN, V.P.; KOVTUN, P.P.

Refining of tin in the Tiraspol' "Metallolitografiia" plant. Kons. i ov.prom. 18 no.4:24-25 Ap '63. (MIRA 16:3)

1. Zavod "Metallolitografiya".
(Tiraspol'—Tin—Metallurgy)

KOVTUN, V.P.; KOVTUN, P.P.

New materials for solid lacquer coating of tinned sheet steel.
Kons. i ov. prom. 18 no.11:30-32 N '63. (MIRA 16:12)

1. Tiraspol'skiy zavod "Metallolitografiya."

BAKHURIN, K.I., kand.tekhn.nauk; KOVTUN, V.S., inzh.

Making conveyer-scraper chain link models of epoxy resins.
Izv.vys.ucheb.zav.; gor.zhur. no.3:84-87 '59.
(MIRA 13:4)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy institut imeni Artema. Rekomendovana kafedroy rudnichnogo transporta.
(Models and modelmaking) (Conveying machinery--Models)

ACC NR: AR6035388 (N) SOURCE CODE: UR/0398/66/000/009/B002/B002

AUTHOR: Shikhiyev, F. M.; Kovtun, V. V.

TITLE: Investigation of soils with the aid of a bulk shear instrument

SOURCE: Ref. zh. Vodnyy transport, Abs. 9B5

REF. SOURCE: Nauchn. tr. Upr. uchebn. zavedeniy M-va morsk. flota SSSR, no. 1, 1965, 103-106

TOPIC TAGS: soil mechanics, shear strength, measuring instrument

ABSTRACT: A bulk shear instrument in which, unlike in three-axis instruments, the investigated soil is in a state condition of plane deformation, was developed at the soil Laboratory of OIIMF at the suggestion and under the leadership of F. M. Shikhnev. The use of the bulk-shear instrument makes it possible to obtain very good agreement between the results of laboratory investigations and the natural operating state of the soil. The construction diagram of the instrument is presented, and the procedures and sequence of the experiments and of the data reduction are described. 2 illustrations. [Translation of abstract]

SUB CODE: 08

UDC: 624.131.3

Card 1/1

KOVTUN, V.Ya.

Safety measures for mechanized roof caving in flat seam long walls.
Bezop. truda v prom. 8 no.12:37-38 D '64. (MIRA 18:3)

1. Nachal'nik shakhty No.35-bis kombinata Chelyabinskugol'.

KHAKIMOV, Kh.Kh., inzh.-marksheder; KOVTUN, V.Ya.

Study of the displacement of the undercut layer of rock and manifestation of rock pressure. Ugol' 39 no.2:9-15 F '64. (MIRA 17:3)

1. Korkinskaya ratonnaya gornotekhicheskaya inspektsiya (for Khakimov). 2. Shakhta No.30 Chelyabinskogo kombinata ugol'nykh predpriyatiy Ministerstva ugol'noy promyshlennosti SSSR (Chelyabinskugol') (for Kovtun).

KOVTUN, V.Ya.

Grouping gently sloping longwalls in the Chelyabinsk Basin according to the degree of difficulty of controlling the roof and recommendations on the selection of roof control certificates. Ugol' 40 no.2:16-20 F '65. (MIRA 18:4)

1. Glavnyy inzh. shakhty No.30 kombinata Chelyabinskugol'.

BERGEL'SON, L.D.; VAVER, V.A.; KOVTUN, V.Yu.; SENYAVINA, L.B.; SHEMYAKIN, M.M.

Unsaturated acids and macrocyclic lactones. Part 2: Stereospecific method for synthesizing natural unsaturated fatty acids with the aid of Wittig reaction. Zhur.ob.khim. 32 no.6:1802-1807 Je '62. (MIRA 15:6)

(Acids, Fatty) (Wittig reaction) (Unsaturated compounds)

SOV/126-7-6-4/24

AUTHORS: Mil'ner, A.S., Kovtun, Ye. F. and Popov, I. N.

TITLE: Magnetic Anomalies of Magnetite

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Nr 6, pp 832-836 (USSR)

ABSTRACT: Early work on magnetic properties of magnetite (Ref 1) showed that at 120°K there is a sudden decrease in magnetization, later found to coincide with sudden changes in other physical properties (Refs 2,3,4). The magnitude of the magnetization change depends on cooling conditions (Ref 7). Magnetic anisotropy changes with falling temperature (Ref 6). The object of the present work was to study the magnetic properties of magnetite at 75-100°K and the influence of change of sign of magnetic-anisotropy constants above the transition temperature on magnetic properties at lower temperatures. A natural rhombohedral magnetite single crystal and a magnetometer of the type described by Domenicali (Refs 7,8) were used. The whole swinging part of the magnetometer was kept in a vacuum (10^{-1} mm Hg) to avoid convection currents. The specimen whose axis coincided with the coil axis was

Card 1/3

cooled from room temperature to 75°K in an external field of about 400 oersted: Fig 2 shows curves of magnetization against temperature for various cooling conditions. Similar results but with less change in magnetization were obtained with the [111] axis along the coil axis. The authors give a graphical representation (Fig 3) of changes in magnetization with field commutation, which also applies to brief switching off of the field. In the previous work A. S. Mil'ner et al.(Ref 9) had dealt with the effect of temperature of application of the magnetic field on the value of the magnetization change, but with specimens with unknown crystallographic direction. In the present work the field was directed along the [100] or [111] directions, giving more regular results. Fig 4 shows plots of magnetization against temperature for [100] directed field applied at 290, 95, 90 and 85°K. The transition of the magnetite through the null value of the anisotropy constant had no effect on these phenomena (in contrast to what occurred when the field was commutated at 75°K for specimens cooled in a field). The authors explain the effect of the temperature of application of the field on

the value of the magnetization jump below 100°K in terms of the nonuniformity of the stoichiometric composition of the specimen over its whole volume. Ye. S. Borovik participated in the discussion of results.
There are 4 figures and 10 references, 4 of which are Soviet, 3 French and 3 English.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet imeni A. M. Gor'kogo (Khar'kov State University imeni A.M.Gor'kiy)

SUBMITTED: April 1, 1958

KOVTUN, Ye. F.

PHASE I BOOK EXPLOITATION SOV/4893

Vsesoyuznoye soveshchaniye po fizike, fiziko-khimicheskim svoyatvam ferritov i fizicheskim obnovam ikh primeneniya. 3d, Minsk, 1959

Ferrity; fizicheskiye i fiziko-khimicheskiye svoystva. Doklady (Ferrites; Physical and Physicochemical Properties. Reports) Minsk, Izd-vo AN BSSR, 1960. 655 p. Errata slip inserted. 4,000 copies printed.

Sponsoring Agencies: Nauchnyy sovet po magnetizmu AN SSSR. Otdel fiziki tverdogo tela i poluprovodnikov AN BSSR.

Editorial Board: Resp. Ed.: N. N. Sirota, Academician of the Academy of Sciences BSSR; K. P. Belov, Professor; Ye. I. Kondorskiy, Professor; K. M. Polivanov, Professor; R. V. Telesnin, Professor; G. A. Smolenskiy, Professor; N. N. Sholts, Candidate of Physical and Mathematical Sciences; E. M. Smolyarenkoi and L. A. Bashkirov; Ed. of Publishing House: S. Kholyavskiy; Tech. Ed.: I. Volokhanovich.

PURPOSE: This book is intended for physicists, physical chemists, radio electronics engineers, and technical personnel engaged in the production and use of ferromagnetic materials. It may also be used by students in advanced courses in radio electronics, physics, and physical chemistry.

COVERAGE: The book contains reports presented at the Third All-Union Conference on Ferrites held in Minsk, Belorussian SSR. The reports deal with magnetic transformations, electrical and galvanomagnetic properties of ferrites, studies of the growth of ferrite single crystals, problems in the chemical and physicochemical analysis of ferrites, studies of ferrites having rectangular hysteresis loops and multicomponent ferrite systems exhibiting spontaneous rectangularity, problems in magnetic attraction, highly coercive ferrites, magnetic spectroscopy, ferromagnetic resonance, magneto-optics, physical principles of using ferrite components in electrical circuits, anisotropy of electrical and magnetic properties, etc. The Committee on Magnetism, AS USSR (S. V. Vonsovskiy, Chairman) organized the conference. References accompany individual articles.

Ferrites (Cont.) SOV/4893

Sirota, N. N., and M. Z. Katsnel'son. Temperature Dependence of the Magnetic Permeability of Nickel-Magnesium-Zinc Ferrites 242

Mishin, D. D., N. T. Plastun, and M. E. Adamovich. Temperature Magnetic Hysteresis in Nickel-Zinc Ferrites 249

Mishin, D. D., L. V. Nikonova, and T. I. Bychkova. The Effect of Omnilateral Compression and Temperature on the Magnetostatic Properties of Nickel-Zinc Ferrites 253

Kovtun, Ye. F., and A. S. Mil'ner. Magnetic Anomalies of Iron and Cobalt Ferrites 258

Sirota, N. N., and M. Z. Katsnel'son. On the Electrical Conductance of Nickel-Magnesium-Zinc Ferrites and its Temperature Dependence 263

Card 9/18

Card 4/18

31598
S/048/61/025/012/002/022
B125/B112

24.2260

AUTHORS: Kovtun, Ye. F., and Mil'ner, A. S.

TITLE: Temperature dependence of magnetization of manganese ferrite in weak fields

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 12, 1961, 1437-1438

TEXT: For the purpose of comparing the processes in manganese ferrites with those in magnetite and cobalt ferrite, the temperature dependence of the magnetization of monocrystalline manganese ferrite between nitrogen and room temperature was measured with the use of a pendulum magnetometer in the following three cases: (1) Precooling the ferrite without magnetic field and raising the temperature from 80° to 280°K causes the magnetization to increase. (2) Precooling the ferrite in a magnetic field shows that magnetization at 80°K is higher than it is in the case mentioned under (1) and that it decreases steadily under heat action. (3) In case of precooling the ferrite in a field perpendicular to that applied during the magnetizing, magnetization shows the same behavior as in case (2).

Card 1/2

Temperature dependence of ...

The values obtained at nitrogen and room temperature for the induction of a manganese ferrite by means of the ballistic method in a field of Helmholtz coils after cooling without field or after cooling in a field of 5 oe agree with results obtained by the magnetometer method. In (1) and (2) the temperature behaves under analogous conditions similar as in magnetite and cobalt ferrite, the magnetization of manganese ferrite does, however, change within a temperature interval considerable wider than that in the afore-mentioned cases. In the third case magnetization will always be increased by the field parallel or perpendicular to the magnetic field applied during the cooling. Contrary to this, the magnetization of magnetite and cobalt ferrite is diminished by applying a field. Hence the conversion of the energy spectrum of electrons in the low temperature range is more complex than that with magnetite. There are 1 figure and 10 references: 5 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: Domenicali C. A., Phys. Rev., 78, 459 (1950); Okamura, Simoizoka, Phys. Rev., 83, 664 (1951); Domenicali C. A., Rev. Scient. Instrum., 21, 327 (1950); Verwey E. et. al., J. Chem. Phys. 15, 181 (1947).

ASSOCIATION: Kharkovskiy gos. universitet im. A. M. Gor'kogo (Khar'kov State University imeni A. M. Gor'kiy)

Card 2/2

KOVTUN, YE. P.

KOVTUN, Ye.P.

Familiarizing students with agricultural technique. Biol.v shkole no.2:48-50 Mr-Ap '57. (MLRA 10:5)

1.Uchitel'nitsa Staro-Minskoy srednoy shkoly no. 19 Staro-Minskogo rayona Krasnodarskogo kraya.
(Agriculture--Study and teaching)

KOVTUN, Ye.P.

Deformation of workings in steeply pitching seams. Ugol' Ukr. 9 no.12:7-9 D '65. (MIRA 19:1)

1. Glavnyy marksheyder shakhty No.10 im. Artema tresta Kommunarsk-ugol'.

KOVTUN, YU

KOVTUN, Yu.

Tasks of economics in the automation of production. Vop.ekon. no.2: 153-158 F '57. (MLRA 10:5)
(Automation) (Economics)

ZASLAVSKIY, David Iosifovich; KOVTUN, Yu., red.; PROTSKO, L., mladshiy red.; SMIRNOV, G., tekhn. red.

[International significance of the Soviet seven-year plan] Mezhdunarodnoe znachenie sovetskoi semiletki. Moskva, Izd-vo sotsial'no-ekon. lit-ry, 1961. 69 p. (MIRA 14:12)
(Russia—Economic policy)

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27.1220

Kaitun
V

39465
S/218/62/027/002/001/001
I016/I213

AUTHOR: Kritskiy, G. A. and Kaitun, Yu. T.

TITLE: Effect of x-irradiation on the autolysis of deoxyribonucleic and ribonucleic acids of bone marrow

PERIODICAL: Biokhimiya, v. 27, no. 2, 1962, 313-316

TEXT: The purpose of this study was to provide the missing information on the effect of irradiation on the autolysis of DNA. The right hind extremity of a rabbit was irradiated under the following conditions: voltage, 180kv, current intensity, 15 ma, filters of 0.5 mm Cu and 0.75 mm Al, focal distance, 30 cm, dose 2,000 r, exposure, 22 min. The rabbit was decapitated immediately after irradiation and bled. The bones of the hind extremities were frozen in solid CO_2, thawed later in a cold-room (+3°C) and the bone marrow extracted at once and homogenized in Ringer's solution. DNA and RNA Were extracted before and after incubation for 2 hrs at 38°, by shaking with phenol-saturated water at *p*H 8.3 and precipitation with alcohol. The precipitate was dissolved in water by shaking for 5 min. The total DNA and RNA content was determined by measuring absorbance at 255 mμ, DNA—by Burton's diphenylamine method and RNA—by the arcinol method. Anout 30 rabbits were used in these experiments. The amount of DNA isolated from the irradiated bone marrow was ca 15% higher than in the non-irradiated control. The difference was probably

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due to weakening of the bond between DNA and protein as a result of irradiation. The rate of autolytic cleavage of DNA immediately after irradiation with a dose of 2,000 r was more than 3 times as high as in the control. The amount of extractable RNA and the rate of its autolysis did not change after irradiation

ASSOCIATION: Institut biokhimii im. A. N. Bakha Akademii nauk, SSSR (Institute of Biochemistry im. A. N. Bakh, Academy of Sciences, USSR), Moscow.

SUBMITTED: August 1, 1961

L 18199-63 EWT(l)/EWT(m)/BDS/ES(j) AMD/AFFTC/ASD AR/K

ACCESSION NR: AP3005651 S/0218/63/028/004/0595/0601

AUTHOR: Kritskiy, G. A.; Safronova, R. N.; Chil-Akopyan, L. A.; Kovtun, Yu. T.

TITLE: Bone marrow nucleic acid autolysis in normal and in X-irradiated animals

SOURCE: Biokhimiya, v. 28, no. 4, 1963, 595-601

TOPIC TAGS: autolysis, RNA, DNA, bone marrow, local X-irradiation, dose

ABSTRACT: For DNA and RNA autolysis of rabbit bone marrow, the right back extremities of a group of rabbits were exposed to X-irradiation (RUP-1) of 2000 r (24 min), & the same parts of another group of rabbits were exposed to 200 r (2.4 min). After irradiation the rabbits were decapitated at different time periods. The back extremities were frozen for 1-2 days, and after thawing at room temperature, the bone marrow was extracted. Nucleic acid autolysis of bone marrow homogenates was investigated. Results indicate that shortly after irradiation DNA autolysis is slightly activated for the 200 r dose. For the 2000 r dose the initial DNA autolysis rate increases almost three

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times. RNA autolysis for a 2000 r dose is activated only 2 hrs after irradiation. DNA and RNA autolytic rates are significantly inhibited after the first day, reach their peak between 2-4 days, and then gradually return to normal. Nucleic acid autolysis changes were compared with changes in their contents. Activation of DNA autolysis is an earlier radiation disturbance than decrease in nucleic acid contents or change in free nucleotide contents. Activation of DNA autolysis shortly after irradiation is a characteristic disturbance in cell biochemistry and leads to cell disintegration. Sharp inhibition of DNA and RNA autolysis shortly after irradiation can be explained by qualitative DNA and RNA changes in the irradiated tissues. The authors express their gratitude to N. B. Aleksandrova for assistance in the study. Orig. art. has: 2 tables, 3 figures.

ASSOCIATION: Institut biokhimii im. A. N. Bakha Akademii Nauk SSSR, Moskva (Institute of Biochemistry, Academy of Sciences, USSR)

SUBMITTED: 18Aug62 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: AM NO REF SOV: 009 OTHER: 018

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KRITSKIY, G.A.; SAFRONOVA, R.N.; CHIL-AKOPYAN, L.A., KOVTUN, Yu.I.

Autolysis of nucleic acids of the marrow after X-ray irradiation and in a normal state. Biokhimiia 28 no.4:695-701 Jl-Ag '63. (MIRA 18:3)

1. Institut biokhimii imeni Bakha AN SSSR, Moskva.

KRITSKIY, G.A.; SAFRONOVA, R.N.; KOVTUN, Yu.T.; MIRLINA, S.Ya.; MALYSHEVA, L.F.

Change in the properties of deoxyribonucleic acid of the bone marrow following X-ray irradiation of an animal. Biokhimiia 29 no.4:701-706 Jl-Ag '64. (MIRA 18:6)

1. Institut biokhimii imeni Bakha AN SSSR i Moskovskiy gosudarstvennyy universitet imeni Lomonosova, Moskva.

KOGAN, Lev Naumovich, kandidat filosofskikh nauk; KOVTUN, Yu.Ye.; ISLENT'-YEVA, P.G., tekhnicheskiy redaktor

[Creative initiative of Soviet workers in socialist production] Tvorcheskaia initsiativa trudiashchikhsia SSSR v sotsialisticheskom proizvodstve. Moskva, Izd-vo "Znanie," 1955. 30 p. (Vsesoiuznoe obshchestbo po rasprostraneniiu politicheskikh i nauchnykh znanii, Ser.2, no.18). (MLRA 8:7)
(Efficiency, Industrial)

KOL'MAN, Ernest, professor, doktor filosofskikh nauk; KOVTUN, Yu.Ye., redaktor; ISLENT'YEVA, P.G., tekhnicheskiy redaktor

[Cybernetics; machines performing some mental functions of man] Kibernetika; o mashinakh, vypolniaiushchikh nekotorye psikhicheskie funktsii cheloveka. Moskva, Izd-vo "Znanie," 1956. 39 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser. 3, no.27)
(Cybernetics) (MLRA 9:8)

KOVTUN, Z. F.

Kovtun, Z. F. "Novocaine block in appendicular infiltrate," Trudy Krymsk. med. in-ta im. Stalina, Vol. XII, 1948, p. 227-29

SO: U-3950, 16 June 53 (Letopis 'Zhurnal 'nykh Statey, no. 5, 1949)

ARTYUKHA, V.S.; YAROSHENKO, I.M.; ISAYENKO, I.I.; BYKOVA, I.G.; KOVTUNA, M.V.; SHTYREVA, Ya.G.

Measures for reducing the amount of compressed air used in the factory. Prom. energ. 11 no.10:24-25 O '56. (MLRA 9:11)
(Compressed air)

KOVRIGHENKO, A. P., MILOVSKAYA, E. B., DOLGOPLASK, B. A., and YERUSALIMSKIY, B. L.

"Free radicals and unsaturated compounds in polymerization," a paper presented at the 9th Congress on the Chemistry and Physics of High Mymer, 28 Jan-2 Feb 57, Moscow, Polymer Research Inst.

B-3,084,395

KOVTUHENKO, Georgiy Alekseyevich; LYULYUKINA, V.F., retsenzent; GORSKOV, V.A., retsenzent; SOSULINA, V.N., redaktor; EL'KINA, E.M., tekhnicheskiy redaktor.

[Production of high grade pottery] Proizvodstvo sortovoi posudy. Moskva, Gos.nauchno-tekhn.izd-vo Ministerstva tekstil. promyshl. SSSR, 1955. 153 p. (MLRA 8:12)
(Pottery)

KOVTUNENKO, G.A.; GOL'BIN, IA.A., kandidat ekonomicheskikh nauk.

Ways of reducing production costs in the glass industry of the White Russian S.S.R. Leg.prom.15 no.1:8-11 Ja '55. (MLRA 8:3)

1. Glavnyy inzhener Belsteklotresta (for Kovtunenko).
(White Russia--Glass manufacture)

KOVTUNENKO, G. A., Cand of Tech Sci -- (diss) "Study of the technological and physicochemical properties of a gold rubin." Minsk, 1957, 19 pp (Belorussian Polytechnical Institute im I. V. stalin), 100 copies (KL, 30-57, 110)

Kovtunenko, G.A.

USSR/Chemical Technology - Chemical Products and Their Application. Ceramics. Glass. Binders. Concrete. H-7

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 2039

Author : Kovtunenko G.A.
Inst :
Title : Preparation of High-Grade Gold Ruby Glass

Orig Pub : Legkaya prom-st', 1957, No 5, 30-32

Abstract : The glass used as starting material had the composition (in %): SiO_2 74, Na_2O 18 CaO 8. The ruby glasses were fused in crucibles having a capacity of 25 kg. The finished glass was casted in plates which were finished, annealed, ground and examined in a spectrophotometer to determine the absorption spectrum curves. It was found that optimal amount of gold is 0.02% and optical amount of tin 1%. The effect of various additions on the process of ruby-formation was ascertained. A good ruby coloration is exhibited by sodium glasses containing

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Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2039

0.25-2.0% lithium oxide. Decrease in CaO improves considerably the coloration and shortens the duration of finishing A large amount of CaO imparts to the ruby a red color with a lilac tinge and increases the duration of finishing. Replacement of CaO by BaO promotes enhancement and uniform distribution of ruby coloration. Incorporation of up to 3% MgO results in a ruby of good red color. An incorporation of up to 1% SrO imparts to the ruby a specifically attractive red coloration. A beneficial effect is produced by addition of ZnO (up to 2%), TiO_2, ZrO_2 and Bi_2O_3. Addition of Al_2O_3 and also of Sb_2O_3 renders difficult the development of the ruby color. Addition, to the batch, of 0.25-1.5 g (per 25 g glass) NaCl or NaBr provides a full equivalent for the tin. Addition of CaF_2 together with the tin accelerates considerably the process of glass coloration. Addition of Fe_2O_3, 0.1-0.25 g per batch

USSR/Chemical Technology - Chemical Products and Their Application. Ceramics. Glass. Binders. Concrete. H-7

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2039

(of 25 g glass) renders the coloration rich and intensily red. Bi_2O_3 can replace the tin and greatly increases in such a case the coloring power of the gold.

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KOVTUNENKO, G.A.; SHALIMO, Z.N.

Coloring of glass with a cobalt pigment of the spinel type.
Sbor. nauch. rab. Inst. fiz.-org. khim. AN BSSR no. 7:185-187
'59. (MIRA 14:4)
(Glass, Colored)

34960
S/713/60/000/001/004/005
D287/D503

15.2620

AUTHORS: Bezborodov, M.A., Kovtunenko, G.A., Volchek, L.K., Orlova, V.M. and Volkadatov, A.F.

TITLE: The effect of strontium and manganese on certain properties of glass

SOURCE: Akademiya nauk BSSR, Minsk. Institut obshchey i neorganicheskoy khimii. Sbornik nauchnykh rabot. no. 1, Minsk, 1960, 51 - 58

TEXT: The authors studied the effect of Sr and Mg on glasses not containing alkalis or borates, suitable for glass-fiber as well as the effect of large quantites of Fe. The foaming and crystallization properties, chemical stability and processing characteristics of the system CaO - SrO - MnO_2 - Fe_2O_3 - SiO_2 were investigated and 102 types of glasses synthesized; the composition of these glasses varied within the following limits: SrO 0 - 45 %, CaO 45 - 0 %, MnO_2 14.5 - 0 %, Fe_2O_3 0 - 24.5 % and SiO_2 40.5 %. During experi-

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D207/D303

The effect of strontium and ...

ments on the founding properties of glass the authors used sand of the following composition: SiO_2 : 98.17 %; Al_2O_3 : 0.55 %; CaO : 0.45 %; MgO : 0.65 %; Fe_2O_3 : 0.07 %; SO_3 : 0.06 %; alkali : 0.02 %; the remaining components of the mixture were added as 'chemically pure' substances. The glasses were processed at 1440°C. Compositions containing ≥ 25 % SrO and ≤ 20 % CaO showed founding characteristics; these were affected adversely on increasing the CaO content (and correspondingly decreasing the SrO content) in the glass. Crystallization properties improved on decreasing the SrO content and simultaneously increasing the CaO. This same improvement was observed, but to a lesser degree, when increasing the Fe_2O_3 content at the expense of MnO_2. Chemical stability of the glasses was tested by determining the loss in weight of the initial powder sample on treatment with water, 0.1 or 2% La_2CO_3, 0.02 or 2% NaOH, 0.02 or 2% H_2SO_4. All samples showed great stability to the aforementioned solutions except to H_2SO_4 where the stability increased on lowering the SrO content (and corres-

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D287/D303

The effect of strontium and ...

pondingly decreasing the CaO content) in the glass. Tests on the drawing of glass fibers were carried out at 1420° C and it was found that compositions with a maximum content of SrO and MnO_2 and a minimum content of CaO and Fe_2O_3 showed the best drawing characteristics. The tensile strength of fibers decreased with increased Fe_2O_3 and decreased MnO_2 contents. There are 5 figures, 1 table and 5 references: 3 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: Chilas, Dimbleby, Winks and Turner, Journ. Soc. Glass Techn. no. 58, p. 172, (1931); Bumpei Ioshiki: The Glass Industry, v. 33, no. 6 (1952)

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Kovtunenko, G.A.

PHASE I BOOK EXPLOITATION SOV/4136

Minsk. Belorusskiy politekhnicheskiy institut

Khimiya i khimicheskaya tekhnologiya silikatnykh materialov (Chemistry and the Chemical Technology of Silicate Materials) Minsk, Red-izd. otdel BPI imeni I. V. Stalina, 1960. 165 p. (Series; Its: Sbornik nauchnykh trudov, vyp. 82) 1,000 copies printed.

PURPOSE: This book is intended for chemists and technicians interested in the physicochemical properties and the production of glass.

COVERAGE: The collection contains 20 articles which give data on the synthesis and physicochemical properties of various widely used and some experimental glass compositions. Numerous property and phase diagrams of glass compositions.

KOVTUNENKO, G.A., kand.tekhn.nauk

Effect of separate ingredients and some admixtures on the formation process of ruby glass. Sbor. nauch. trud. Bel. politekh. inst. no.82:112-115 '60. (MIRA 15:5)
(Glass, Colored)

KOVTUNENKO, I.P.

USSR/Biology - Botany

Card 1/1 Pub. 86 - 19/42

Authors : Kovtunenko, I. P. (Nal'chik-Dolinsk)

Title : New method of preserving the bulbs of gladioli

Periodical : Prirods, 45/1, 100-102, Jan 56

Abstract : The difficulty of preserving the bulbs of gladioli (sword lilies) which succumb to cold is discussed. A method is proposed by which the bulbs are dried and maintained at a temperature slightly above freezing, the method being varied as to the precise temperature, degree of moisture of the air and kind of container. The effects of these variations are evaluated. Illustrations.

Institution : .....

Submitted : .....

KOVTUNENKO, M., inzh.

Construction of the Kuban-Kalaus irrigation system. Sel'. stroi. no.6:3-4 Je '62. (MIRA 15:7)
(Stavropol Territory--Irrigation)